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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,389	07/01/2002	Arthur Schaffer	30421	3278

7590 12/02/2005
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EXAMINER

ROBINSON, KEITH O NEAL

ART UNIT PAPER NUMBER

1638

DATE MAILED: 12/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,389

Applicant(s)

SCHAFFER, ARTHUR

Examiner

Keith O. Robinson, Ph.D.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,5,11,15 and 16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,11,15 and 16 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

This Office Action is in response to Applicant's amendments, arguments and affidavit filed September 6, 2005.

The amendments to claims 1, 2, 5, 11, 15 and 16, and the cancellation of claims 3, 4, 6-10 and 12-14, filed September 6, 2005, have been received and entered in full.

Claims 1-2, 5, 11 and 15-16 are pending.

Response to Arguments

2. The 35 U.S.C. 102(b) art rejections for claims 15-16 based on the Eshed et al and Schaffer references are withdrawn in view of Applicant's arguments (see pages 9-10 of the 'Remarks', filed September 6, 2005).

Claim Rejections - 35 USC § 112, first paragraph – Written Description

3. Claims 1, 2, 5, 11 and 15-16 remain rejected under 35 U.S.C. 112, first paragraph as failing to comply with the written description requirement for reasons of record as set forth in the Office Action mailed March 4, 2005, pages 5-6 for claims 1-16.

Applicant argues that the application provides written description for "at least one wild tomato species...while pointing out the suitability of any *Lycopersicon* species" (see page 4, sixth paragraph to page 5, end of second paragraph).

This is not persuasive. The specification fails to provide a written description for the broad genus of *Lycopersicon* species and only mentions the use of *L. hirsutum* line LA 1777. Regarding the other patents cited by Applicant, the Examiner maintains that each application is decided on its own merits and in view of the current legal precedents. The Examiner maintains the rejection set forth in the Office Action filed March 4, 2005 (see page 6, second and third paragraphs).

Claim Rejections - 35 USC § 112, first paragraph - Enablement

4. Claims 1, 2, 5, 11 and 15-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The rejection is repeated for reasons of record as set forth in the Office Action mailed March 4, 2005, pages 3-5 as applied to claims 1-16.

Applicant argues that other *Lycopersicon* species can be crossed with *L. esculentum* to obtain tomato fruit characterized by the capability of natural dehydration while on the tomato plant because it is well known in the art that wild species of *Lycopersicon* show genetic conservation with respect to genetic characteristics related to fruit quality (see page 5, fourth and fifth paragraphs of 'Remarks' filed September 6, 2005).

This is not persuasive. The specification has only shown that *L. hirsutum* line LA 1777 can be crossed with *L. esculentum* breeding line 1630 to obtain tomato fruit

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characterized by the capability of natural dehydration while on the tomato plant (see page 5, line 29 to page 6, line 22). Applicant's assertion that "it is well known that the wild species of *Lycopersicon* show genetic conservation especially with respect to genetic characteristics related to fruit quality" does not enable one skilled in the art to use the invention with any tomato plant from the broad genus of *L. esculentum* and cross it with any tomato plant from the broad genus of any *Lycopersicon* species to obtain tomato fruit characterized by the capability of natural dehydration while on the tomato plant.

Also, the deposit requirement for claims 15-16 is maintained as set forth in the Office Action dated June 8, 2004 (see pages 4-6). The Schaffer declaration, filed September 6, 2005, lists several tomato lines that contain the gene associated with natural dehydration (see page 2). However, it appears that the tomato lines presented on page 2 of the Schaffer declaration are non-*esculentum* species, rather than introgressions of said species into *L. esculentum* as claimed. It is unclear whether any CWP gene from species other than *L. hirsutum* was transferred to *L. esculentum* and expressed in the *esculentum* genetic background.

In addition, neither the Frary et al reference nor the Nesbitt et al reference provides evidence that any tomato plant from the broad genus of *L. esculentum* can be crossed with any tomato plant from the broad genus of *Lycopersicon* species to obtain tomato fruit characterized by the capability of natural dehydration while on the tomato plant.

The Schaffer declaration, filed September 6, 2005, states “[f]urther studies showed that [the *Cwp*] gene is expressed in all wild *Lycopersicon* species tested” (see page 2, second paragraph); however, the list does not encompass introgressions of the broad genus of wild *Lycopersicon* species into *L. esculentum*. Furthermore, the experimental conditions (including stringency of PCR assay conditions) used to generate the data in the Table on page 2 of the Schaffer declaration were not disclosed. Applicant asserts that all the wild *Lycopersicon* species expressed the CWP gene. However, it is unclear whether the gene expressed in each species actually encoded a CWP protein, in the absence of any information regarding the sequence conservation between the genes and proteins in the different species, or the ability of these genes to confer the wrinkled phenotype to *Lycopersicon esculentum* when introgressed therewith.

The Applicant states that Appendix B demonstrates that the CWP (cuticular water permeability) gene, a gene that when silenced leads to fruit cuticles impervious to extreme water loss, is expressed by several wild species and thus this enables one of skill in the art to use the claimed invention with any wild *Lycopersicon* species.

This is not persuasive. Appendix B shows the identification of the *Cwp* gene using an introgression line derived from the interspecific hybridization of *L. esculentum* and the single exemplified species *L. hirsutum* (see second page of Appendix B, ‘Phenotype’). In addition, the study states “[the *Cwp* gene] is part of a family that...has no known function” (see second page of Appendix B, ‘Conclusion’); thus, it cannot be

certain that said gene even plays a role in tomato fruit characterized by the capability of natural dehydration while on the tomato plant.

Applicant argues that the Examiner's statement that the present method is unpredictable and not reproducible is erroneous because of "a highly distinguishable and readily observable phenotype, namely wrinkled fruit skin which is raisin-like in appearance" (see page 8, third paragraph of 'Remarks' filed September 6, 2005).

The Examiner maintains the rejection set forth in the Office Action filed March 4, 2005 (see page 5, fourth paragraph). There is no guidance regarding how one of skill in the art would distinguish between a tomato plant that has a wrinkling phenotype based on, for example, environmental parameters from one that has a wrinkling phenotype due to introgression of exotic germplasm as is claimed in the instant invention. Furthermore, the Examiner fails to see the relevance in comparing the present invention to that of the selection of transformed bacteria via blue/white colony selection (see page 8, last paragraph to page 9, end of first paragraph of 'Remarks' filed September 6, 2005).

Furthermore, amended claim 1 recites a method for identifying plants by growing them "past a [emphasis added] stage of fruit ripening", implying that any stage of fruit ripening, including early or pre-reddening stages, would be sufficient to distinguish the claimed tomato plants. However, guidance is only provided for the evaluation of tomato fruit grown on the vine "when the fruit is allowed to remain on the vine after the normal red ripe harvest stage" (see page 5 of the specification, lines 11-13).

Conclusion

5. No claims are allowed.
6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Keith O. Robinson, Ph.D. whose telephone number is 571-272-2918. The examiner can normally be reached on Monday - Friday 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on (571) 272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Keith O. Robinson, Ph.D.

November 17, 2005

DAVID T. FOX
PRIMARY EXAMINER
GROUP 180

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